ABB MEASUREMENT & ANALYTICS | APPLICATION NOTE

Recording and control in the Marine industry

Monitoring and controlling bilge water discharge

Improving efficiency and productivity

Measurement made easy

Effective control of bilge water overflow using ABB's ScreenMaster RVG500 paperless recorder

Introduction

Bilge water is a mixture of fresh water, sea water, oil, sludge, chemicals and other fluids that accumulates in bilge wells, the lowest compartments below the waterlines of a ship.

Accumulation of contaminated bilge water into the bilge wells is inevitable as it originates from a variety of sources – tank overflows, cleaning, maintenance, drains and leaks.

If the bilge wells overflow, bilge water could rise up to or above the floor plates, become a threat to the engine room, lead to accidents, emergency situations or even disturb the stability of the ship. To avoid these risks, the bilge water is periodically pumped out of the bilge wells using bilge pumps – see Figure 1 (over page).

The International Convention for the Prevention of Pollution from Ships (MARPOL) states that bilge water cannot be pumped directly into the sea (unless it is for the purpose of securing the safety of a ship or saving life at sea). It must first be treated to bring the level of suspended oil particles down to 15 ppm or less (the permissible limit) and can only be discharged when the ship is at sea.

Vessels in violation of this legislation are fined heavily and in some cases crew members may even face prison sentences.

The process

Accumulated bilge water from the bilge wells is pumped into bilge water holding tanks by a bilge pump. The contents of the bilge holding tank are then passed through treatment equipment to reduce the oil content to below 15 ppm. If the oil content is still above 15 ppm after treatment, the bilge water is recirculated back to the holding tank.

Keeping an accurate record of discharges and the location of discharges is very important for vessels to prove that they adhere to MARPOL legislation. ABB's Recording and Control products offer a world-class solution for management of shipboard bilge water.

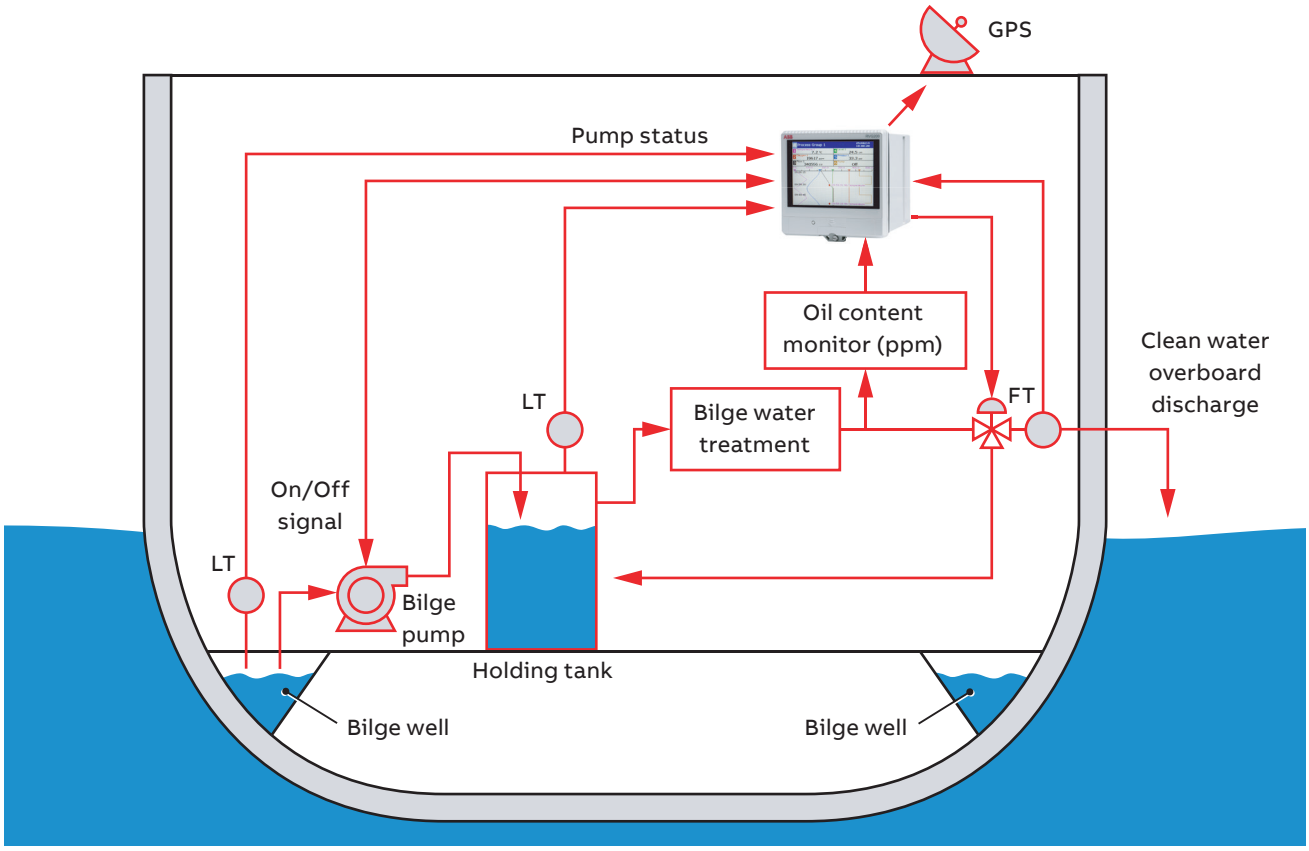
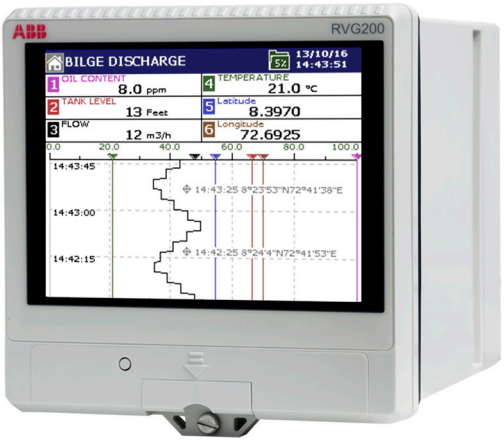


Figure 1 Bilge water discharge process

What ABB products are suitable?

ScreenMaster RVG200



ABB's ScreenMaster RVG200 recorder offers a versatile and secure solution for data recording.

The RVG200 is ideal for recording bilge well level, holding tank level, bilge alarm status, bilge pump status, bilge discharge and GPS coordinates of discharge.

The recorder provides a visual representation of whole process with the convenience of fingertip control of the screen. RVG200 also simplifies record keeping and automates the bilge water management process.

The RVG200 can be connected to a GPS via serial communications using NMEA protocol.

ScreenMaster RVG200 – main features

- High security data recording – encrypted data storage
- Process Mimic – provides a visual representation of your process (see Figure 2)
- Remote access and monitoring via Ethernet
- Automatic data collection via Ethernet, combined with powerful data analysis using DataManager Pro software
- Hosedown protection to IP66 and NEMA 4X

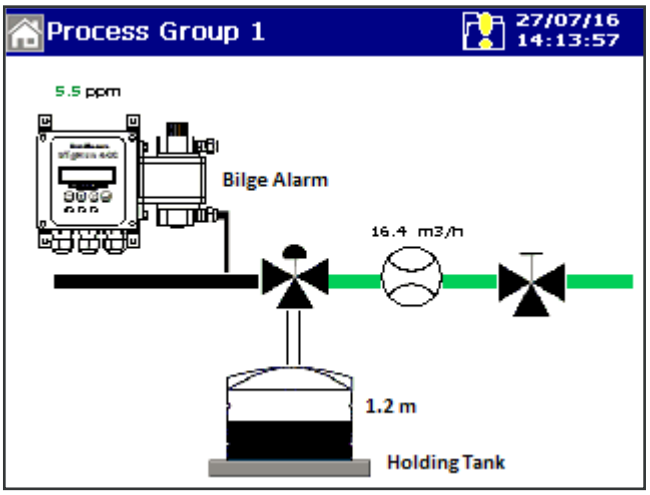


Figure 2 Example of Process Mimic

For more information on how to configure an RVG200 for this application, please see TD/RandC/015-EN

ABB Limited
Measurement & Analytics
Howard Road, St. Neots
Cambridgeshire, PE19 8EU
UK
Tel: +44 (0)1480 475 321
Fax: +44 (0)1480 217 948
Mail: instrumentation@gb.abb.com

abb.com/recorders

AN/RandC/012-EN Rev. B 03.2018